

**REMARKS****Status of the Claims**

Claims 1-11 were presented for examination, and all claims were rejected.

Claims 8, 10 and 11 have been amended to correct obvious typographical errors. No new matter is added by the amendment.

New claims 12-14 have been added. These claims are supported by, e.g., paragraph [0011] of the specification as filed.

The grounds for rejection have been very carefully considered. The above amendments to the claims, and the following remarks, are presented in response to the rejections. Entry of the amendment and reconsideration in view of these comments are respectfully requested.

**Rejections under 35 USC 102**

Claims 1-9 were rejected as allegedly anticipated by Bawendi, et al., U.S. 6,617,583. The Applicants traverse this rejection.

According to the examiner, Bawendi's invention is "very much like the Instant Invention." The Examiner said that the "basic concept of Bawendi is shown. Like in the Instant Invention, Bawendi achieves labeling by using quantum dots, and may use multiple dots to label a particular item. Figures 1 and 2 is [sic] also noteworthy, showing a plurality of different arrangements of quantum dot."

With respect to claim 1, the Examiner said this:

"As for developing a set of labels (selecting a set of compounds) by selecting from a set (library) of candidate markers using observation as recited in the claims, Bawendi discusses this with [sic] clearly and explicitly at column 4, lines 16+:..."

The Examiner then quoted this passage from Bawendi:

In another aspect, the present invention provides methods for identifying a compound having a particular characteristic of interest comprising providing a library of compounds, testing said library of compounds for a particular characteristic of interest, observing the photoluminescence spectrum for each identifier attached to each support containing a compound of interest, and identifying the compound of interest by determining the reaction sequence as encoded by said one or more sizes of quantum dots.

The Applicant respectfully asserts that this statement in Bawendi is unrelated to the concept embodied in present claim 1. Claim 1 of the present application relates to a method for generating a set of labels—the labels can then be used in any suitable application. The claimed method involves generating ‘candidate labels’, selecting ones that are distinguishable by comparing their spectra to see which ones are distinct enough to be suitable, i.e., which are acceptably distinguishable to be used together. The cited passage from the reference expressly relates to a use of previously made labels—it does not relate to or suggest a method for making a set of distinguishable labels.

Claim 1 of the present application says this:

1. An inventory label generating method comprising: generating a plurality of candidate labels; and  
  
selecting a plurality of acceptably distinguishable labels from among the candidate labels by determining spectra emitted by the candidate labels when the candidate labels are energized, and by comparing the spectra of the candidate labels.

The passage in Bawendi represents an application of a set of quantum dot-encoded identifiers already prepared and ‘in use’; it does not represent a step of “selecting a plurality of labels...” Quite the contrary, this passage in Bawendi just describes reading individual identifiers that have already been selected and are being used to track synthesized compounds. (The identifiers

in Bawendi are seemingly analogous to the 'labels' in the instant claims). The identifiers in Bawendi are not 'candidate labels', and the 'library' in Bawendi is a library of compounds, not a set of labels. Bawendi energizes and reads the identifiers as a way to identify which compound each identifier is associated with, by tracking the synthesis steps associated with the identifier or identifiers for each compound; it does not read the identifiers to make a determination about whether the identifiers are 'acceptably distinguishable.' Indeed, Bawendi's method could use an identifier for each step, rather than one for each compound, so each compound may not be associated with a single identifier. This passage does not describe a process or step of "selecting a plurality of acceptably distinguishable labels." Thus it does not disclose the method of claim 1.

The cited passage from Bawendi is not related to a method for selecting labels from among a set of candidate labels as described in claim 1. Accordingly, this rejection is overcome and should be withdrawn. Since claims 2-9 are dependent from claim 1 and thus also include limitations from claim 1 that were not found in the cited reference, these claims are also patentable over Bawendi.

With respect to claim 5, the Examiner said this:

As for modeling, Bawendi does not appear to attempt to predict the properties of individual dots. He does, however, do what can be considered simple modeling. For instance, he knows (column 9, lines 10-41) that the number of quantum dots is proportional to the resulting intensity. He also knows that if two materials (dots) are near each other (but still discrete, not together as a compound) the resulting spectrum will be an additive combination of the two.

(The Examiner also refers to this same language to assert that claim 6 is anticipated.)

The Applicant traverses this characterization of the reference as though the reference anticipates or discloses 'modeling'. The Examiner appears to recognize that modeling requires some sort of prediction ("Bawendi does not appear to attempt to predict the properties of individual dots..."); the analysis, however, only points to what Bawendi allegedly 'knows'. The Examiner alleges that Bawendi 'knows' that the intensity of a spectrum is proportional to the number of quantum dots, and that two quantum dots produce a spectrum that is additive. The Applicants

respectfully assert that knowledge is not prediction, and the ‘knowledge’ imputed to Bawendi is not a model, nor does it suggest modeling a spectrum. The Applicants respectfully submit that modeling a spectrum requires more than information, and that Bawendi was not even shown to suggest a *reason* to model a spectrum. Bawendi does not disclose or suggest modeling spectra, and the Examiner has not shown that a person of ordinary skill would even have a *reason* to modify Bawendi to produce a model of a spectrum. No *prima facie* case for an obviousness rejection has been established. Accordingly, the Applicants request that this rejection be withdrawn.

Claim 5 says “wavelength/intensity spectra of the candidate labels are determined by modeling a combination of a plurality of marker signals.” Bawendi neither discloses nor suggests determining spectra by modeling a combination of a plurality of marker signals. Anticipation is an exacting standard, it requires the Examiner to show that every limitation of the claim is expressly or inherently present. In this case, the claim is a method claim; regardless of what information or ‘knowledge’ Bawendi appears to disclose, it cannot anticipate claim 5 (or 6) without disclosing a method and disclosing that “the wavelength/intensity spectra of the candidate labels are determined by modeling...” Moreover, the method includes the limitations of claim 1: it must include determining spectral properties of ‘candidate labels’ by modeling a combination of a plurality of markers’ as part of a method for generating an inventory label, not merely in the general context of looking at quantum dots. Furthermore, claim 6 requires actually ‘calculating at least one signal’ by modeling emissions, which is clearly not anticipated by what Bawendi allegedly ‘knows’. The ‘modeling’ limitation of claims 5 and 6 are not disclosed or suggested by Bawendi. For this additional reason, rejections of these claims should be withdrawn.

Claim 7 requires the additional limitation of “adjusting the calculated signals...” which Bawendi does not disclose or suggest. The Examiner said, “Clearly, even with knowledge of the intensity of a single quantum dot, the most accurate determination of the intensity of a group of dots would come from direct measurement...” This misses the point of the claim. The claim does not recite an accurate determination of the intensity of a group of dots. It recites “adjusting the calculated signals...” as part of a method for generating an inventory label. This limitation does not relate to an accurate determination or a measurement; it relates to a calculated signal. Bawendi

neither discloses nor suggests a method or step that includes calculating a signal or adjusting a calculated signal. The rejection of claim 7 should be withdrawn for this additional reason.

Similarly, claim 9 includes ‘comparing at least some of the candidate labels with a library of distinguishable labels’; the cited passage from Bawendi does not disclose comparison of a label to a library of distinguishable labels. The ‘library’ in that passage is a library of compounds, not of labels; it does not disclose or suggest that Bawendi has created a library of labels—indeed, even if the identifiers are all stored, that does not disclose or suggest the method of this claim, which relates to a method to generate a set of labels. Nor does Bawendi disclose a method that includes determining if a candidate label is acceptable, then “adding acceptable candidate labels to the library” of labels. For these additional reasons, claim 9 is not anticipated by Bawendi.

For the reasons discussed above, Bawendi does not anticipate the methods of claims 1-9. The Applicants respectfully request that these rejections be reconsidered and withdrawn.

#### **Rejections under 35 U.S.C. 103**

Claims 10 and 11 were rejected over Bawendi, as allegedly obvious. The Examiner said, “Bawendi has in certain embodiments multiple different quantum dots, each of which has its own spectral response. As such, there can be expected to be at least two different spectral widths corresponding to the different spectral dots.” The Examiner also quoted Bawendi’s explanation of the Gaussian line shapes and widths, and said, “As for spacing, Bawendi does not explicitly say that the spacing is greater than the FWHM, but it is quite obvious that it should be, for if it [sic] not, two lines will blend together and will not be clearly distinguishable. Clearly Bawendi [sic] the point Bawendi makes in referring to the FWHM is the possibility of allowing high information density (i.e. lines that can be close to each other), because of narrow FWHM values (see all of column 6, where Bawendi discusses this.)”

The Applicants traverse this rejection, for at least the following reasons.

First, claim 10 says, “energizing a plurality of labels...” The Examiner has not shown that Bawendi discloses or suggests this limitation; most of Bawendi’s discussion appears to relate to construction or observation of individual bar-code-like identifiers, comprising one or more particle size distributions of quantum dots to track a specific item. See col. 3, lines 13-21. Even if, for argument’s sake, the Examiner’s assessment of the FWHM discussion were correct, that discussion can relate to observation of a single ‘identifier’ or ‘label’ rather than a plurality of labels. For any single identifier or label, multiple different quantum dots are used to encode a unique identifier; the width of spectral lines is relevant in that context because it relates to the ability to separate dots within a single identifier / label. Thus Bawendi’s discussion of peak widths does not necessarily relate to different labels, it can relate to just one identifier / label.

Moreover, the Examiner’s discussion of the FWHM separation is an oversimplification, and would result in an unnecessarily limiting label design or selection. Bawendi does not say that peaks need to be separated by FWHM, apparently, and the specification explains that it is actually *not necessary* for peaks to be separated by a distance of at least a FWHM in order for them to be identified and distinguished. Contrary to the Examiner’s position that “it would be quite obvious” that peaks should be separated by a FWHM, peaks can be resolved and identified without such wide separation, especially if suitable labels are used as described throughout the specification.

Second, the claim recites measuring a second wavelength that is ‘at least a predetermined minimum wavelength separation’ from the first peak. Bawendi was not shown to disclose or suggest a ‘predetermined minimum wavelength.’

Third, the fact that Bawendi discloses embodiments with “multiple different quantum dots” does not establish that they have the spectral properties of the claim, merely because they are “expected” to have at least two different spectral peaks: multiple quantum dots, as Bawendi teaches, can form a particle size distribution while still being in effect the same size—see col. 5, lines 3-9. More is required to support an obviousness rejection than the assumption that Bawendi discloses embodiments falling within the scope of the claim, just because some of its embodiments comprise multiple different quantum dots.

No *prima facie* case for an obviousness rejection has been established for claim 10; withdrawal of the rejections of claims 10 and 11 is thus requested.

**Obviousness-Type Double Patenting**

Claims 1-11 were provisionally rejected for alleged obviousness-type double patenting over co-pending application 11/075,364. Applicants note that this application does not appear to be available on Public PAIR. In a discussion with Applicants' representative, the Examiner noted that the above-cited application has common inventorship, but different ownership. The Examiner also indicated that claim amendments made in the above-cited application rendered the obviousness-type double patenting rejection moot and asked that Applicants note this in the response.

Accordingly, Applicants request the withdrawal of this response.

**CONCLUSION**

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

Applicants respectfully request a three (3) month extension of time under CFR 1.136(a) to keep the application pending up to the date of June 20, 2008. Applicants hereby authorize the Commissioner to charge this extension of time fee to **Deposit Account No. 50-3994**. In the event that additional fees or extensions of time are required, applicants herein petition for the necessary extension of time under 37 C.F.R. § 1.136(a) and authorize the Commissioner to charge these fees or credit any overpayment associated with this or any other filing to applicants deposit account. This is not an authorization to pay the issue fee.

Dated: June 20, 2008

Respectfully submitted,

Electronic signature: /Laurie L Hill/  
Laurie L. Hill, Ph.D.

Registration No.: 51,804  
INVITROGEN CORPORATION  
5791 Van Allen Way  
Carlsbad, CA 92008  
(760) 431-8898